

On the existence of kinks of a perturbed sine-Gordon equation

Otavio Gomide

Universidade Federal de Goiás

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Abstract

In this talk I will give some ideas about techniques used to deal with exponentially small phenomena and how to apply them to obtain an asymptotic formula for the distance between stable and unstable invariant manifolds (of a certain object) when Melnikov theory can not be applied. In the sequel, I will use this approach to analyze the existence of heteroclinic connections between critical points and/or periodic orbits in a 4-dimensional Hamiltonian model derived from a perturbed sine-Gordon equation.